

Division 3. Air Resources Board

Chapter 5. Standards for Motor Vehicle Fuels

Article 2. Standards for Diesel Fuel

§ 2282. Aromatic Hydrocarbon Content of Diesel Fuel.

(a) Regulatory Standard.

(1) On or after October 1, 1993, except as otherwise provided in this subsection (a), no person shall sell, offer for sale, or supply any vehicular diesel fuel unless:

(A) The aromatic hydrocarbon content does not exceed 10 percent by volume; or

(B) The vehicular diesel fuel has been reported in accordance with all of the requirements of subsection (d), and:

1. The aromatic hydrocarbon content does not exceed the designated alternative limit, and

2. Where the designated alternative limit exceeds 10 percent by volume, the excess aromatic hydrocarbon content is fully offset in accordance with subsection (d); or

(C) The vehicular diesel fuel has been reported in accordance with all of the requirements of subsection (g)(7), and meets all of the specifications for a certified diesel fuel formulation identified in an applicable Executive Order issued pursuant to subsection (g)(6); or

(D) The vehicular diesel fuel is exempt under subsection (e) and:

(i) The aromatic hydrocarbon content does not exceed 20 percent by volume; or

(ii) The vehicular diesel fuel has been reported in accordance with all of the requirements of subsection (d) and

a. The aromatic hydrocarbon content does not exceed the designated alternative limit, and

b. Where the designated alternative limit exceeds 20 percent by volume, the excess aromatic hydrocarbon content is fully offset in accordance with subsection (d), treating all references in subsection (d) to 10 percent by volume as references to 20 percent by volume; or

(iii) The vehicular diesel fuel has been reported in accordance with all of the requirements of subsection (g)(7), and meets all of the specifications for a certified diesel fuel formulation identified in an applicable Executive Order issued pursuant to subsections (g)(6) and (g)(8).

(2) Subsection (a)(1) shall not apply to a sale, offer for sale, or supply of vehicular diesel fuel to a refiner where the refiner further processes the diesel fuel at the refiner's refinery prior to any subsequent sale, offer for sale, or supply of the diesel fuel.

(3) For the purposes of subsection (a)(1), each sale of diesel fuel at retail for use in a motor vehicle, and each supply of diesel fuel into a motor vehicle fuel tank, shall also be deemed a sale by any person who previously sold or supplied such diesel fuel in violation of subsection (a)(1).

(4) This subsection (a) shall not apply to a small refiner during the effective period of any suspension of the sulfur in diesel fuel limits issued pursuant to Section 2281(g).

(b) Definitions.

For the purposes of this section:

(0.5) "Aromatic hydrocarbon" has the same meaning as "total aromatic hydrocarbons."

(1) "Chemical composition" means the name and percentage by weight of each compound in an additive and the name and percentage by weight of each element in an additive.

(2) "Designated alternative limit" means an alternative aromatic hydrocarbon limit, expressed in percent aromatic hydrocarbon content by volume, which is assigned by a producer or importer to a final blend of vehicular diesel fuel pursuant to subsection (d).

(3) "Diesel fuel" means any fuel that is commonly or commercially known, sold or represented as diesel fuel No. 1-D or No. 2-D, pursuant to the specifications in ASTM Standard Specification for Diesel Fuel Oils D 975-81, which is incorporated herein by reference.

(4) "Exempt volume" means:

(A) Except as otherwise provided in subsection (b)(4)(B), 65 percent of the average of the three highest annual production volumes of distillate fuel reported for a small refiner's California refinery in the period 1983 to 1987, inclusive, to the California Energy Commission (CEC) as required by the Petroleum Industry Information Reporting Act of 1980 (Public Resources Code Sections 25350 et seq.); provided that for any small refiner that reported no distillate fuel production for two or more years in the 1983-1987 period and that has installed hydrotreating processes which allow the production of diesel fuel with a sulfur content of 500 parts per million or less, exempt volume may be calculated as 65 percent of the average annual production volumes of distillate fuel reported for the small refiner's California refinery for 1989 and 1990.

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(B) In the case of a small refiner who, in an application or amended application submitted pursuant to subsection (e)(2), notifies the executive officer of its election to be subject to this subsection (b)(4)(B), a volume determined in accordance with the following four steps:

(i) First, the barrel per calendar day “operable crude oil capacity” of the small refiner’s refinery for 1991 and 1992 is identified, based on data which are reported to the Executive Officer from the CEC and are derived from “Monthly Refining Reports” (EIA 810, Revised 1/89) submitted to the CEC no later than June 20, 1994. If the CEC is unable to derive such data from the “Monthly Refining Reports” for a particular small refiner, the executive officer shall determine the small refiner’s operable crude oil capacity for 1991 and 1992 based on other publicly available and generally recognized sources.

(ii) Second, this operable crude oil capacity is multiplied by 0.9011, representing the overall refinery utilization rate (crude oil run divided by operable crude oil capacity) in the California refining industry for 1991 and 1992, as derived from reports of crude oil run and operable capacity in the “Quarterly Oil Reports” issued by the CEC.

(iii) Third, the resulting crude throughput volume is multiplied by the average of the refinery’s two highest ratios of distillate produced to crude oil distilled in the period 1988 through 1992, based on distillate production data recorded by the CEC from MO-7 reporting forms (Revised 11-87) submitted to the CEC no later than June 30, 1994 and from crude oil run data derived by the CEC from “Monthly Refining Reports” submitted to the CEC no later than June 30, 1994, and is further multiplied by 365 to identify an annualized value.

(iv) Fourth, the resulting annual volume of distillate production is multiplied by a fraction determined in accordance with this subsection (b)(4)(iv), which represents the average proportion of small refiners’ distillate production that has been sold as diesel fuel for use in motor vehicles in California from 1988 through 1992. The fraction shall be based on the activities of all small refiners who during October 1, 1993 through June 30, 1994 lawfully produced and supplied vehicular diesel fuel. With respect to each such small refiner, the executive officer shall calculate a single fraction representing the average of the refiner’s two highest annual ratios of [a] diesel fuel produced by the small refiner and sold for use in California motor vehicles to [b] distillate produced, over the period 1988 through 1992. In calculating these ratios, distillate production shall be based on distillate production data recorded by the CEC from MO-7 reporting forms (Revised 11-87) submitted to the CEC no later than June 30, 1994, and the volume of diesel fuel produced by the small refiner and sold for use in California motor vehicles shall be derived from sales data certified by authorized representatives of the small refiners and such other information from the small refiners deemed necessary by the executive officer. The executive officer shall then combine the single fractions for each such small refiner. The annual distillate production volume identified pursuant to subsection (b)(4)(iii) shall be multiplied by the fraction that represents the average of the single fractions for each small refiner.

(5) “Executive Officer” means the executive officer of the Air Resources Board, or his or her designee.

(6) “Final blend” means a distinct quantity of diesel fuel which is introduced into commerce in California without further alteration which would tend to affect the fuel’s aromatic hydrocarbon content.

(7) “Formulation” means the composition of a diesel fuel represented by a test fuel submitted pursuant to subsection (g).

(8) “Further process” means to perform any activity on diesel fuel, including distillation, treating with hydrogen, or blending, for the purpose of bringing the diesel fuel into compliance with the standards in subsection (a)(1).

(9) “Hydrotreating process” means a type of hydrotreating process in which hydrogen is used in the presence of heat, pressure, and catalysts to saturate aromatic hydrocarbons in order to produce low-aromatic hydrocarbon content diesel fuel.

(10) “Importer” means any person who first accepts delivery in California of vehicular diesel fuel.

(11) “Import facility” means the facility at which imported diesel fuel is first received in California, including, in the case of diesel fuel imported by cargo tank and delivered directly to a facility for dispensing diesel fuel into motor vehicles, the cargo tank in which the diesel fuel is imported.

(12) “Independent refiner” means any refiner who:

(A) Is not, and has not been since September 1, 1988, a small refiner;

(B) Owns or operates a refinery in California at which, in the third calendar quarter (July-September) of 1988, and in each calendar quarter thereafter, more than 70 percent of the crude oil input is obtained directly or indirectly from crude oil producers who contemporaneously do not control, are not controlled by, and are not under common ownership with, the owner or operator of the refinery;

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(C) In the third calendar quarter (July-September) of 1988, and in each calendar quarter thereafter, directly or indirectly obtains more than 70 percent of the aggregated crude oil input at its refineries in the United States, from crude oil producers who contemporaneously do not control, are not controlled by, and are not under common ownership with, such refiner.

(D) In calendar year 1988 had more than 70 percent of its worldwide total gross sales, combined with the gross sales of entities which own, are owned by, or are under common ownership with the refiner, directly attributable to the wholesale distribution of petroleum products refined by the refiner or affiliated entity.

(13) "Motor vehicle" has the same meaning as defined in Section 415 of the Vehicle Code.

(14) "Polycyclic aromatic" (also referred to as "polynuclear aromatic hydrocarbons") means an organic compound containing two or more aromatic rings.

(15)(A) "Produce" means to convert liquid compounds which are not diesel fuel into diesel fuel. When a person blends volumes of blendstocks which are not diesel fuel with volumes of diesel fuel acquired from another person, and the resulting blend is diesel fuel, the person conducting such blending has produced only the portion of the blend which was not previously diesel fuel. When a person blends diesel fuel with other volumes of diesel fuel, without the addition of blendstocks which are not diesel fuel, the person does not produce diesel fuel.

(B) Subsection (b)(15)(A) notwithstanding, for the purposes of subsection (e) only, a small refiner who blends volumes of blendstocks which are not diesel fuel, or volumes of diesel fuel having an aromatic hydrocarbon content exceeding 20 percent by volume, with diesel fuel acquired from another person, in order to make diesel fuel having an aromatic hydrocarbon content not exceeding 20 percent by volume, shall be deemed to have produced the entire volume of the resulting blend and the person who initially converted non-diesel compounds into the acquired diesel fuel has also produced the volume of acquired diesel fuel.

(16) "Producer" means any person who produces vehicular diesel fuel in California.

(17) "Refiner" means any person who owns, leases, operates, controls or supervises a refinery.

(18) "Refinery" means a facility that produces liquid fuels by distilling petroleum. A small refiner's refinery includes all bulk storage and bulk distribution facilities jointly owned or leased with the facility that produces liquid fuels by distilling petroleum.

(19) "Small refiner" means any refiner who owns or operates a refinery in California that:

(A) Has and at all times had since January 1, 1978, a crude oil capacity of not more than 50,000 barrels per stream day;

(B) Has not been at any time since September 1, 1988, owned or controlled by any refiner that at the same time owned or controlled refineries in California with a total combined crude oil capacity of more than 50,000 barrels per stream day; and

(C) Has not been at any time since September 1, 1988, owned or controlled by any refiner that at the same time owned or controlled refineries in the United States with a total combined crude oil capacity of more than 137,500 barrels per stream day.

(20) "Straight-run California diesel fuel" means diesel fuel produced from crude oil which is commercially available in California by distillation, without the use of cracking or other chemical conversion processes.

(21) "Stream day" means 24 consecutive hours of actual operation of a refinery.

(22) "Supply" means to provide or transfer a product to a physically separate facility, vehicle, or transportation system.

(23) "Vehicular diesel fuel" means any diesel fuel (A) which is not conspicuously identified as a fuel which may not lawfully be dispensed into motor vehicle fuel tanks in California; or (B) which the person selling, offering for sale, or supplying the diesel fuel knows will be dispensed into motor vehicle fuel tanks in California; or (C) which the person selling, offering for sale, or supplying the diesel fuel in the exercise of reasonable prudence should know will be dispensed into motor vehicle fuel tanks in California, and that is not the subject of a declaration under penalty of perjury by the purchaser, offeree or recipient stating that s/he will not sell, offer for sale, or transfer the fuel for dispensing, or dispense the fuel, into motor vehicle fuel tanks in California.

(c) Test Method.

(1) Compliance with the aromatic hydrocarbon content limitations specified in this section 2282 shall be determined by ASTM Test Method D 5186-96, which is incorporated herein by reference. The following correlation equation shall be used to convert the SFC results in mass percent to volume percent.

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Correlation Equation: Aromatic Hydrocarbons expressed in % by volume = $0.916x$ (Aromatic Hydrocarbons expressed in % by weight) + 1.33

(d) Designated Alternative Limit.

(1) A producer or importer may assign a designated alternative limit in accordance with this subsection (d) to a final blend of vehicular diesel fuel produced or imported by the producer or importer. In no case may the designated alternative limit be less than the aromatic hydrocarbon content of the final blend shown by the sample and test conducted pursuant to subsection (f).

(2) The producer or importer shall notify the executive officer of the volume (in gallons) and the designated alternative limit of the final blend. This notification shall be received by the executive officer before the start of physical transfer of the diesel fuel from the production or import facility, and in no case less than 12 hours before the producer either completes physical transfer or commingles the final blend.

(3) Within 90 days before or after the start of physical transfer of any final blend of vehicular diesel fuel to which a producer or importer has assigned a designated alternative limit exceeding 10 percent, the producer or importer shall complete physical transfer from the production or import facility of vehicular diesel fuel in sufficient quantity and with a designated alternative limit sufficiently below the limit specified in subsection (a)(1)(A) to offset the volume of aromatic hydrocarbons in the diesel fuel reported in excess of the limit.

(4) If, through no intentional or negligent conduct, a producer or importer cannot report within the time period specified in subsection (d)(2), then the producer or importer shall notify the executive officer of the required data as soon as reasonably possible and shall provide a written explanation of the cause of the delay in reporting. If, based on the written explanation and the surrounding circumstances, the executive officer determines that the conditions of this subsection (d)(4) are met, timely notification shall be deemed to have occurred.

(5) The executive officer may enter into a protocol with any individual producer or importer for the purposes of specifying how the requirements in subsections (d)(2) and (3) shall be applied to the producer's or importer's particular operations, as long as the executive officer reasonably determines that application of the regulatory requirements under the protocol is not less stringent or enforceable than application of the express terms of subsections (d)(2) and (3). Any such protocol shall include the producer's or importer's agreement to be bound by the terms of the protocol.

(6) No person shall sell, offer for sale, or supply vehicular diesel fuel, in a final blend to which a producer or importer has assigned a designated alternative limit exceeding 10 percent aromatics content, where the total volume of the final blend sold, offered for sale, or supplied exceeds the volume reported to the executive officer pursuant to subsection (d)(2) or (5).

(7) No person shall sell, offer for sale or supply vehicular diesel fuel, in a final blend to which a producer or importer has assigned a designated alternative limit less than 10 percent aromatics content, where the total volume of the final blend sold, offered for sale, or supplied is less than the volume reported to the executive officer pursuant to subsection (d)(2) or (5).

(8) Whenever the final blend of a producer includes volumes of diesel fuel the producer has produced and volumes it has not produced, the producer's designated alternative limit shall apply only to the volume of diesel fuel the producer has produced. In such a case, the producer shall report to the ARB in accordance with subsection (d)(2) both the volume of diesel fuel produced and the total volume of the final blend.

(e) Small Refiner Diesel Fuel.

(1) The provisions of subsection (a)(1)(A), (B), and (C) shall not apply to the diesel fuel that is produced by a small refiner at the small refiner's California refinery and that is first consecutively supplied from the refinery as vehicular diesel fuel in each calendar year, up to the small refiner's exempt volume (up to one quarter of the small refiner's exempt volume for the period from October 1, 1993-December 31, 1993). Diesel fuel which is designated by the small refiner as not exempt under this section (e), and which is reported to the executive officer pursuant to a protocol entered into between the small refiner and the executive officer, shall not be counted against the exempt volume and shall not be exempt under this subsection (e). This exemption shall not apply to any diesel fuel supplied from a small refiner's refinery in any calendar quarter in which less than 25 percent of the diesel fuel supplied from the refinery was produced from the distillation of crude oil at the refinery. The foregoing notwithstanding in the case of any small refiner that pursuant to subsection (a)(4) has not been subject to subsection (a)(1) until October 1, 1994, all vehicular diesel fuel produced by the small refiner at the small refiner's California refinery and supplied from the

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refinery from October 1, 1994 through December 31, 1994, shall be exempt from the provisions of subsection (a)(1)(A), (B) and (C), up to the quarterly volume limits imposed by the executive officer in connection with issuance of suspension orders pursuant to section 2281(g). These quarterly volume limits are as follows: Kern Oil & Refining, 714,100 barrels; Paramount Petroleum, 1,064,700 barrels; and Powerine Oil Company, 1,419,600 barrels.

(2) To qualify for an exemption under this subsection (e), a refiner shall submit to the executive officer an application for exemption executed in California under penalty of perjury, on the Air Resources Board's ARB/SSD/CPB Form 89-9-1, for each of the small refiner's California refineries. The application shall specify the crude oil capacity of the refinery at all times since January 1, 1978, the crude oil capacities of all the refineries in California and the United States which are owned or controlled by, or under common ownership or control with, the small refiner since September 1, 1988, data demonstrating that the refinery has the capacity to produce liquid fuels by distilling petroleum, and copies of the reports made to the California Energy Commission as required by the Petroleum Industry Reporting Act of 1980 (Public Resources Code Sections 25350 et seq.) showing the annual production volumes of distillate fuel at the small refiner's California refinery for 1983 through 1987. Within 90 days of receipt of the application, the executive officer shall grant or deny the exemption in writing. The exemption shall be granted if the executive officer determines that the applicant has demonstrated that s/he meets the provisions of subsection (b)(19), and shall identify the small refiner's exempt volume. The exemption shall immediately cease to apply at any time the refiner ceases to meet the definition of small refiner in subsection (b)(19).

(3) In addition to the requirements of subsection (f) below, each small refiner who is covered by an exemption shall submit to the executive officer reports containing the information set forth below for each of the small refiner's California refineries. The reports shall be executed in California under penalty of perjury, and must be received within the time indicated below:

(A) The quantity, ASTM grade, aromatic hydrocarbon content, and batch identification of all diesel fuel, produced by the small refiner, that is supplied from the small refinery in each month as vehicular diesel fuel, within 15 days after the end of the month;

(B) For each calendar quarter, a statement whether 25 percent or more of the diesel fuel transferred from the small refiner's refinery was produced by the distillation of crude oil at the small refiner's refinery, within 15 days after the close of such quarter;

(C) The date, if any, on which the small refiner completes transfer from its small refinery in a calendar year of the maximum amount of vehicular diesel fuel which is exempt from subsection (a)(1)(A) and (B) pursuant to subsection (e), within 5 days after such date;

(D) Within 10 days after project completion, any refinery addition or modification which would affect the qualification of the refiner as a small refiner pursuant to subsection (b)(19); and

(E) Any change of ownership of the small refiner or small refiner's refinery, within 10 days after such change of ownership.

(4) Whenever a small refiner fails to provide records identified in subsection (e)(3)(A) or (B) in accordance with the requirements of those subsections, the vehicular diesel fuel supplied by the small refiner from the small refiner's refinery in the time period of the required records shall be presumed to have been sold or supplied by the small refiner in violation of section (a)(1)(A).

(f) Testing and Recordkeeping.

(1) Each producer shall sample and test for aromatic hydrocarbon content each final blend of vehicular diesel fuel which the producer has produced, in accordance with an applicable test method identified in subsection (c). If a producer blends diesel fuel components directly to pipelines, tankships, railway tankcars, or trucks and trailers, the loading(s) shall be sampled and tested for aromatic hydrocarbon content by the producer or authorized contractor. The producer shall maintain, for two years from the date of each sampling, records showing the sample date, product sampled, container or other vessel sampled, final blend volume, and the aromatic hydrocarbon content. In the event a producer sells, offers for sale, or supplies diesel fuel which the producer claims is not vehicular diesel fuel and which has an aromatic hydrocarbon content exceeding the standard set forth in subsection (a)(1), such producer shall maintain, for two years from the date of any sale or supply of the fuel, records demonstrating that the diesel fuel was not vehicular diesel fuel when it was sold or supplied by the producer. All diesel fuel produced by the producer and not tested as vehicular diesel fuel by the producer pursuant to this subsection shall be deemed to have an aromatic

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hydrocarbon content exceeding 10 percent, unless the producer demonstrates that the diesel fuel meets the requirements of subsection (a)(1).

(2) Each importer shall sample and test for aromatic hydrocarbon content each shipment of vehicular diesel fuel which the importer has imported by tankship, pipeline, railway tankcars, trucks and trailers, or other means, in accordance with an applicable test method identified in subsection (c). The importer shall maintain, for two years from the date of each sampling, records showing the sample date, product sampled, container or other vessel sampled, the volume of the shipment, and the aromatic hydrocarbon content. All diesel fuel imported by the importer and not tested as vehicular diesel fuel by the importer pursuant to this subsection shall be deemed to have an aromatic hydrocarbon content exceeding 10 percent, unless the importer demonstrates that the diesel fuel meets the requirements of subsection (a)(1).

(3) A producer or importer shall provide to the executive officer any records required to be maintained by the producer or importer pursuant to this subsection (d) within 20 days of a written request from the executive officer if the request is received before expiration of the period during which the records are required to be maintained. Whenever a producer or importer fails to provide records regarding a final blend of vehicular diesel fuel in accordance with the requirements of this subsection, the final blend of diesel fuel shall be presumed to have been sold by the producer in violation of subsection (a)(1).

(4) The executive officer may perform any sampling and testing deemed necessary to determine compliance by any person with the requirements of subsection (a) and may require that special samples be drawn and tested at any time.

(5) The executive officer may enter into a protocol with any producer, importer, or person who sells, offers for sale, or transfers diesel fuel to a producer for the purpose of specifying alternative sampling, testing, recordkeeping, or reporting requirements which shall satisfy the provisions of subsections (f)(1), (f)(2), or (e)(3). The executive officer may only enter into such a protocol if s/he reasonably determines that application of the regulatory requirements under the protocol will be consistent with the state board's ability effectively to enforce the provisions of subsection (a). Any such protocol shall include the producer's or importer's agreement to be bound by the terms of the protocol.

(g) Certified Diesel Fuel Formulations Resulting in Equivalent Emissions Reductions.

(1) The executive officer, upon application of any producer or importer, may certify diesel fuel formulations in accordance with this subsection (g). The applicant shall initially submit a proposed test protocol to the executive officer. The proposed test protocol shall include: (A) the identify of the entity proposed to conduct the tests described in subsection (g)(4); (B) test procedures consistent with the requirements of this subsection (g); (C) test data showing that the candidate fuel meets the specifications for No. 1-D or 2-D diesel fuel set forth in ASTM D975-81 (which is incorporated herein by reference), and identifying the characteristics of the candidate fuel set forth in subsection (g)(2);

(D) test data showing that the fuel to be used as the reference fuel satisfies the specifications identified in subsection (g)(3); (E) reasonably adequate quality assurance and quality control procedures; and (F) notification of any outlier identification and exclusion procedure that will be used, and a demonstration that any such procedure meets generally accepted statistical principles.

Within 20 days of receipt of a proposed test protocol, the executive officer shall advise the applicant in writing either that it is complete or that specified additional information is required to make it complete. Within 15 days of submittal of additional information, the executive officer shall advise the applicant in writing either that the information submitted makes the proposed test protocol complete or that specified additional information is still required to make it complete. Within 20 days after the proposed test protocol is deemed complete, the executive officer shall either approve the test protocol as consistent with this subsection (g) or advise the applicant in writing of the changes necessary to make the test protocol consistent with this subsection (g). Any notification of approval of the test protocol shall include the name, telephone number, and address of the executive officer's designee to receive notifications pursuant to subsection (g)(4)(C)(ii). The tests shall not be conducted until the protocol is approved by the executive officer.

Upon completion of the tests, the applicant may submit an application for certification to the executive officer. The application shall include the approved test protocol, all of the test data, a copy of the complete test log prepared in accordance with subsection (g)(4)(C)(ii), a demonstration that the candidate fuel meets the requirements for

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certification set forth in this subsection (g), and such other information as the executive officer may reasonably require.

Within 20 days of receipt of an application, the executive officer shall advise the applicant in writing either that it is complete or that specified additional information is required to make it complete. Within 15 days of submittal of additional information, the executive officer shall advise the applicant in writing either that the information submitted makes the application complete or that specified additional information is still required to make it complete. Within 30 days after the application is deemed complete, the executive officer shall grant or deny the application. Any denial shall be accompanied by a written statement of the reasons for denial.

(2) The applicant shall supply the candidate fuel to be used in the comparative testing pursuant to subsection (g)(4). The candidate fuel shall meet the specifications for No. 1-D or 2-D diesel fuel set forth in ASTM D975-81, which is incorporated herein by reference. The following characteristics of the candidate fuel shall be determined as the average of three tests conducted in accordance with the referenced test method (the ASTM methods are incorporated herein by reference):

- (A) Sulfur content (not to exceed 500 ppm) by ASTM D2622-94;
- (B) Total aromatic hydrocarbon content, by ASTM D5186-96;
- (C) Polycyclic aromatic hydrocarbon content, by ASTM D5186-96;
- (D) Nitrogen content, by ASTM D4629-96;
- (E) Cetane number, by ASTM D613-84;

(F) Identity and concentration of each additive, by a test method specified by the applicant and determined by the executive officer to adequately determine the presence and concentration of the additive.

The applicant may also specify any other parameters for the candidate fuel, along with the test method for determining the parameters. The applicant shall provide the chemical composition of each additive in the candidate fuel, except that if the chemical composition of an additive is not known to either the applicant or to the manufacturer of the additive (if other), the applicant may provide a full disclosure of the chemical process of manufacture of the additive in lieu of its chemical composition.

(3) The reference fuel used in the comparative testing described in subsection (g)(4) shall be produced from straight-run California diesel fuel by a hydrodearomatization process and shall have the characteristics set forth below under "General Reference Fuel Specifications" (the listed ASTM methods are incorporated herein by reference):

Reference Fuel Specifications

<i>Property</i>	<i>ASTM Test Method</i>	<i>General</i>	<i>Small Refiner</i>
		<i>Reference Fuel Specifications</i>	<i>Reference Fuel Specifications</i>
Sulfur Content.....	D2622-94.....	500 ppm max.....	500 ppm max.
Aromatic Hydrocarbon Content, Vol. %	D5186-96.....	10% max.....	20% max.
Polycyclic Aromatic Hydrocarbon Content, WT.	D5186-96.....	1.4% max.....	4% max.
<i>Property</i>	<i>ASTM Test Method</i>	<i>General</i>	<i>Small Refiner</i>
		<i>Reference Fuel Specifications</i>	<i>Reference Fuel Specifications</i>
Nitrogen Content.....	D4629-96.....	10 ppm max.	90 ppm max.
Natural Cetane Number	D613-84	48 minimum.....	47 minimum
Gravity, API	D287-82	33-39.....	33-39
Viscosity at 40°, cSt.....	D445-83	2.0-4.1.....	2.0-4.1
Flash point, °F, (min.)	D93-80	130	130
Distillation, °F.....	D86-96		
IBP.....		340-420.....	340-420
10 % REC.....		400-490.....	400-490
50 % REC.....		470-560.....	470-560
90 % REC.....		550-610.....	550-610
EP.....		580-660.....	580-660

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(4) (A) Exhaust emission tests using the candidate fuel and the reference fuel shall be conducted in accordance with the "California Exhaust Emission Standards and Test Procedures for 1985 and Subsequent Model Heavy-Duty Diesel-Powered Engines and Vehicles," as incorporated by reference in Title 13, California Code of Regulations, Section 1956.8(b). The tests shall be performed using a Detroit Diesel Corporation Series-60 engine, or, if the executive officer determines that the Series-60 is no longer representative of the post-1990 model year heavy-duty diesel engine fleet, another engine found by the executive office to be representative of such engines. A determination by the executive officer that an engine is no longer representative shall not affect the certification of a diesel fuel formulation based on prior tests using that engine pursuant to a protocol approved by the executive officer.

(B) The comparative testing shall be conducted by a party or parties that are mutually agreed upon by the executive officer and the applicant. The applicant shall be responsible for all costs of the comparative testing.

(C) (i) The applicant shall use one of the following test sequences:

1. If both cold start and hot start exhaust emission tests are conducted, a minimum of five exhaust emission tests shall be performed on the engine with each fuel, using either of the following sequences, where "R" is the reference fuel and "C" is the candidate fuel: RC RC RC RC RC and (continuing in the same order), or RC CR RC CR RC (and continuing in the same order).

The engine mapping procedures and a conditioning transient cycle shall be conducted with the reference fuel before each cold start procedure using the reference fuel. The reference cycle used for the candidate shall be the same cycle as that used for the fuel preceding it.

2. If only hot start exhaust emission tests are conducted, one of the following test sequences shall be used throughout the testing, where "R" is the reference fuel and "C" is the candidate fuel:

Alternative 1: RC CR RC CR (continuing in the same order for a given calendar day; a minimum of twenty individual exhaust emission tests must be completed with each fuel)

Alternative 2: RR CC RR CC (continuing in the same order for a given calendar day; a minimum of twenty individual exhaust emission tests must be completed with each fuel)

Alternative 3: RRR CCC RRR CCC (continuing in the same order for a given calendar day; a minimum of twenty-one individual exhaust emission tests must be completed with each fuel)

For all alternatives, an equal number of tests shall be conducted using the reference fuel and the candidate fuel on any given calendar day. At the beginning of each calendar day, the sequence of testing shall begin with the fuel that was tested at the end of the preceding day. The engine mapping procedures and a conditioning transient cycle shall be conducted after every fuel change and/or at the beginning of each day. The reference cycle generated from the reference fuel for the first test shall be used for all subsequent tests. For alternatives 2 and 3, each paired or triplicate series of individual tests shall be averaged to obtain a single value which would be used in the calculations conducted pursuant to section (g)(5)(D).

(ii) The applicant shall submit a test schedule to the executive officer at least one week prior to commencement of the tests. The test schedule shall identify the days on which the tests will be conducted, and shall provide for conducting the test consecutively without substantial interruptions other than those resulting from the normal hours of operations at the test facility. The executive officer shall be permitted to observe any tests. The party conducting the testing shall maintain a test log which identifies all tests conducted, all engine mapping procedures, all physical modifications to or operational tests of the engine, all recalibrations or other changes to the test instruments, and all interruptions between tests and the reason for each such interruption. The party conducting the tests or the applicant shall notify the executive officer by telephone and in writing of any unscheduled interruption resulting in a test delay of 48 hours or more, and of the reason for such delay. Prior to restarting the test, the applicant or person conducting the tests shall provide the executive officer with a revised schedule for the remaining tests. All tests conducted in accordance with the test schedule, other than any tests rejected in accordance with an outlier identification and exclusion procedure included in the approved test protocol, shall be included in the comparison of emissions pursuant to subsection (g)(5).

(D) In each test of a fuel, exhaust emissions of oxides of nitrogen (NO_x) and particulate matter (PM) shall be measured. In addition, for each test the soluble organic fraction (SOF) of the particle matter in the exhaust emissions shall be determined in accordance with the Air Resources Board's "Test Method for Soluble Organic Fraction (SOF) Extraction" dated April 1989, which is incorporated herein by reference.

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(5) The average emissions during testing with the candidate fuel shall be compared to the average emissions during testing with the reference fuel, applying one-sided Student's t statistics as set forth in Snedecar and Cochran, Statistical Methods (7th ed.), page 91, Iowa State University Press, 1980, which is incorporated herein by reference. The executive officer shall issue a certification pursuant to this paragraph only if he or she makes all of the determinations set forth in subsections (g)(5)(A), (B), and (C) below, after applying the criteria in subsection (g)(5)(D).

(A) The average individual emissions of NO_x and SOF, respectively, during testing with the candidate fuel do not exceed the average individual emissions of NO_x and SOF, respectively, during testing with the reference fuel.

(B) The average emissions of PM during testing with the candidate fuel, reduced by the lesser of (1) the secondary sulfate particulate credit, or (2) the sulfate portion of the average emissions of PM during testing with the candidate fuel, does not exceed the average emissions of PM during testing with the reference fuel, where:

Secondary sulfate particulate credit (g/BHP-h) = 10.42 x (fuel sulfur content difference, wt. %) x (BSFC, lb/BHP-h)

Fuel Sulfur Content Difference = The difference in sulfur content between 500 ppm and the sulfur content of the candidate fuel.

BSFC = The brake specific fuel consumption measured during the engine tests prescribed in subsection (g)(4).
and

The sulfate portion of PM emissions is determined by ARB Method NLB007, dated July 27, 1988, which is incorporated herein by reference, or such other method determined by the executive officer to give equivalent results.

(C) Use of any additive identified pursuant to subsection (g)(2)(F) in heavy-duty engines will not increase emissions of noxious or toxic substances which would not be emitted by such engines operating without the additive.

(D) In order for the determinations in subparagraphs (A) and (B) to be made, for each referenced pollutant the candidate fuel shall satisfy the following relationship:

$$\bar{X}_c < \bar{X}_R + \delta - S_p \cdot \sqrt{\frac{2}{n}} \quad t(a, 2n-2)$$

Where:

\bar{X}_c = Average emissions during testing with the candidate fuel

\bar{X}_R = Average emissions during testing with the reference fuel

δ = tolerance level equal to 2 percent of XR for NO_x, 4 percent of XR for PM, and 12 percent of XR for SOF.

S_p = Pooled standard deviation

$t(a, 2n-2)$ = The one-sided upper percentage point of t distribution with $\alpha = 0.15$ and $2n-2$ degrees of freedom

n = Number of tests of candidate and reference fuel

(6) If the executive officer finds that a candidate fuel has been properly tested in accordance with this subsection (g), and makes the determinations specified in subsection (g)(5), then he or she shall issue an Executive Order certifying the diesel fuel formulation represented by the candidate fuel. The Executive order shall identify all of the characteristics of the candidate fuel determined pursuant to subsection (g)(2). The Executive Order shall provide that the certified diesel fuel formulation has the following specifications: (1) a sulfur content, total aromatic hydrocarbon content, polycyclic aromatic hydrocarbon content, and nitrogen content not exceeding that of the candidate fuel, (2) a cetane number not less than that of the test fuel, and (3) presence of all additives that were contained in the candidate fuel, in a concentration not less than in the test fuel, except for an additive demonstrated by the applicant to have the sole effect of increasing cetane number. All such characteristics shall be determined in accordance with the test methods identified in subsection (g)(2). The Executive Order shall assign an identification name to the specific certified diesel fuel formulation.

(7) In order for a producer or importer of a final blend to comply with subsection (a) through the sale, offer for sale or supply of a certified diesel fuel formulation, the producer or importer shall notify the executive officer in

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accordance with this subsection (g)(7). The notification shall identify the final blend and the identification name of the certified diesel fuel formulation. The notification shall be received by the executive officer at least 12 hours before start of physical transfer of the final blend from the production or import facility. A producer or importer intending to have a series of its final blends be a specific certified formulation may enter into a protocol with the executive officer for reporting such blends as long as the executive officer reasonably determines the reporting under the protocol would provide at least as much notice to the executive officer as notification pursuant to the express terms of this subsection (g)(7).

(8) A small refiner may apply for certification of a diesel fuel formulation to be sold pursuant to subsection (a)(1)(C). All of the provisions of this subsection (g) shall apply to certification of such a diesel fuel formulation, except the reference fuel in the comparative testing described in subsection (g)(4) shall have the characteristics set forth under "Small Refiner Reference Fuel Specifications" in the table in subsection (g)(3).

(9) (A) If the executive officer determines that a commercially available diesel fuel blend meets all of the specifications of a certified diesel fuel formulation set forth in an Executive Order issued pursuant to subsection (g)(6), but does not meet the criteria in subsection (g)(5) when tested in accordance with subsection (g)(4), the executive officer shall modify the certification order as is necessary to assure that diesel fuel blends sold commercially pursuant to the certification will meet the criteria set forth in subsection (g)(5). The modifications to the order may include additional specifications or conditions, or a producer of the commercially available diesel fuel blend found not to meet the criteria.

(B) The executive officer shall not modify a prior certification order without the consent of the applicant and of the producer of the commercially available diesel fuel blend found not to meet the criteria, unless the applicant and producer are first afforded an opportunity for a hearing in accordance with Title 17, California Code of Regulations, Part III, Chapter 1, Subchapter 1, Article 4 (commencing with Section 60040). If the executive officer determines that a producer would be unable to comply with this regulation as a direct result of an order modification pursuant to this subsection, the executive officer may delay the effective date of such modification for such period of time as is necessary to permit the producer to come into compliance in the exercise of all reasonable diligence.

(10) Any diesel fuel formulation certified in accordance with this subsection (g) as it existed before the amendments effective 12/26/91 shall no longer be considered certified after 12/26/91 unless the executive officer determines that the test data submitted with the application demonstrates that the diesel fuel formulation satisfies the criteria for certification in subsection (g) as amended effective 12/26/91.

(h) Variances.

(1) Any person who cannot comply with the requirements set forth in subsection (a)(1) because of reasons beyond the person's reasonable control may apply to the executive officer for a variance. The application shall set forth:

- (A) the specific grounds upon which the variance is sought;
- (B) the proposed date(s) by which compliance with the provisions of subsection (a)(1) will be achieved; and
- (C) a plan reasonably detailing the method by which compliance will be achieved.

(2) Upon receipt of an application for a variance containing the information required in subsection (h)(1), the executive officer shall hold a hearing to determine whether, or under what conditions and to what extent, a variance from the requirements in subsection (a)(1) is necessary and will be permitted. Notice of the time and place of the hearing shall be sent to the applicant by certified mail not less than 20 days prior to the hearing. Notice of the hearing shall also be submitted for publication in the California Regulatory Notice Register and sent to every person who requests such notice, not less than 20 days prior to the hearing.

(3) At least 20 days prior to the hearing, the application for the variance shall be made available to the public for inspection. Interested members of the public shall be allowed a reasonable opportunity to testify the hearing and their testimony shall be considered.

(4) No variance shall be granted unless all of the following findings are made:

(A) that, because of reasons beyond the reasonable control of the applicant, requiring compliance with subsection (a)(1) would result in an extraordinary economic hardship;

(B) that the public interest in mitigating the extraordinary hardship to the applicant by issuing the variance outweighs the public interest in avoiding any increased emissions of air contaminants which would result from issuing the variance.

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(C) that the compliance plan proposed by the applicant can reasonably be implemented and will achieve compliance as expeditiously as possible.

(5) Any variance order shall specify a final compliance date by which the requirements in subsection (a)(1) will be achieved. Any variance order shall also contain a condition that specified increments of progress necessary to assure timely compliance be achieved, and such other conditions, including limitations on the aromatic hydrocarbon content of diesel fuel produced for use in motor vehicles, that the executive officer, as a result of the testimony received at the hearing, finds necessary to carry out the purposes of Division 26 of the Health and Safety Code.

(6) The executive officer may require, as a condition of granting a variance, that a cash bond, or a bond executed by two or more good and sufficient sureties or by a corporate surety, be posted by the party to whom the variance was granted to assure performance of any construction, alteration, repair, or other work required by the terms of conditions of the variance.

Such bond may provide that, if the party granted the variance fails to perform such work by the agreed date, the cash bond shall be forfeited to the state board, or the corporate surety or sureties shall have the option of promptly remedying the variance default or paying to the state board an amount, up to the amount specified in the bond, that is necessary to accomplish the work specified as a condition of the variance.

(7) No variance from the requirements set forth in subsection (a)(1) based on a plan for compliance which includes the installation of major additional equipment shall be issued to a producer where installation of the equipment was not included in a compliance plan or first update submitted pursuant to subsection (i). No such variance shall have a duration of more than three years.

(8) No variance which is issued due to conditions of breakdown, repair, or malfunction of equipment shall have a duration, including extensions, of more than six months.

(9) The executive officer may, after holding a hearing without complying with the provisions of subsections (h)(2) and (h)(3), issue an emergency variance to a person from the requirements of subsections (a)(1) upon a showing of reasonably unforeseeable extraordinary hardship and good cause that a variance is necessary. In connection with the issuance of an emergency variance, the executive officer may waive the requirements of subsection (h)(6). No emergency variance may extend for a period of more than 45 days. If the applicant for an emergency variance does not demonstrate that he or she can comply with the provisions of subsection (a)(1) within such 45-day period, an emergency variance shall not be granted unless the applicant makes a prima facie demonstration that the findings set forth in subsection (h)(4) should be made. The executive officer shall maintain a list of persons who have informed the executive officer in writing of their desire to be notified by telephone in advance of any hearing held pursuant to this paragraph (g)(9), and shall provide advance telephone notice to any such person.

(10) A variance shall cease to be effective upon failure of the party to whom the variance was granted substantially to comply with any condition.

(11) Upon the application of any person, the executive officer may review and for good cause modify or revoke a variance from the requirements of subsection (a)(1) after holding a hearing in accordance with the provisions of subsections (h)(2) and (h)(3).

(i) Submittal of Compliance Plan.

Each producer shall, by July 1, 1990, submit to the executive officer a plan showing the producer's schedule for achieving compliance with subsection (a)(1). Each producer shall, by July 1, 1991, July 1, 1992, and July 1, 1993, submit an update of the plan.

(j) Independent Refiner Diesel Fuel.

(1) Until October 1, 1994, a producer who has demonstrated to the satisfaction of the Executive Office that it is an independent refiner shall be subject to all of the provisions of this Section 2282 applicable to small refiners. Such demonstration shall be included in any compliance plan submitted by an independent refiner pursuant to subsection (i).

(2) The Executive Officer shall issue an Executive Order making an independent refiner subject to all of the provision of this Section 2282 applicable to small refiners until October 1, 1996, if the independent refiner demonstrates to the Executive Officer's satisfaction that it is making good faith efforts to construct additional dearomatization equipment, either at the independent refiner's refinery or in a cooperative agreement with one or

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more other independent refiners, in accordance with a schedule which is reasonably likely to enable the independent refiner to comply with subsection (a)(1) through use of the dearomatization equipment by October 1, 1996.

(3) In order to qualify for an Executive Order under subsection (j)(2), the independent refiner shall, by June 30, 1994, submit to the Executive Officer a compliance schedule setting forth the sequence and respective dates of all key events in the construction process including completion of plans and engineering drawings, ordering of equipment, receipt of equipment, signing of construction and other necessary contracts, commencement and completion of various phases of work, commencement and completion of testing, and other similar events and dates.

(4) An independent refiner who has received an Executive Order pursuant to subsection (j)(2) shall notify the Executive Officer in writing within 10 days after the failure of the independent refiner to meet any increment of progress on the compliance schedule submitted, and the likely effect of that failure on the ability of the independent refiner to comply with subsection (a)(1) by October 1, 1996. If, following a public hearing conducted on at least 10-days written notice to the independent refiner, the Executive Officer determines that the independent refiner will no longer be able to achieve compliance with subsection (a)(1) through the use of the specified dearomatization equipment by October 1, 1996, s/he shall rescind the Executive Order effective 10 days after written notification of the rescission to the independent refiner.

(5) The provisions of this subsection (j) shall immediately cease to apply to any refiner who ceases to meet the definition of independent refiner in subsection (b)(12).

(6) In the case of any independent refiner subject, pursuant to this subsection (j), to the provisions of this section applicable to small refiners, exempt volume shall be determined in accordance with subsection (b)(4)(A).

(k) Whenever this section provides for the use of a specified test method, another test method may be used following a determination by the executive officer that the other method produces results equivalent to the results with the specified method.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018 and 43101, Health and Safety Code; and *Western Oil and Gas Ass'n. v. Orange County Air Pollution Control District*, 14 Cal. 3d 411, 121 Cal. Rptr. 249 (1975). Reference: Sections 39000, 39001, 39002, 39003, 39010, 39500, 39515, 39516, 41511, 43000, 43016, 43018 and 43101, Health and Safety Code; and *Western Oil and Gas Ass'n. v. Orange County Air Pollution Control District*, 14 Cal. 3d 411, 121 Cal. Rptr. 249 (1975).

REFERENCE